



## Product Update

# ADRE® for Windows—now more versatile and powerful

*Essential machinery information for fast and accurate machinery diagnostics*



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**T**he world's most powerful portable diagnostic instrument, ADRE® for Windows, has become more versatile and more powerful. It now runs on many more types of notebook computers, automatically performs calculations that make diagnostics easier and more accurate, and lets you apply meaningful labels to certain plots.

### Essential when problems occur

An advanced machinery data management system, such as Bently Nevada's Data Manager® 2000 for Windows NT™, automatically collects

and processes machine vibration and process data. Changes in that data indicate conditions that could lead to premature failure and machine faults at an early stage of development. Once a fault has progressed, the data identifies the nature, severity, and location of the fault.

Machines that are not connected to a continuous online machinery data management system can be investigated with the same degree of sophistication, with Bently Nevada's ADRE for Windows System.

ADRE for Windows is a compact, lightweight diagnostic instrument that a machinery diagnostics engineer carries to the site of a suspected machinery problem. He connects it to the machine's transducers or monitoring system, and it

immediately begins collecting and analyzing data from several transducers, simultaneously. The engineer can view data as it is collected, store it for later analysis, or both. He can view data from several transducers, each in its own "window," view data from one transducer in several different plot formats, each in its own window, or both. If the problem occurs infrequently, he can leave the system in place and set it to automatically collect data.

The ADRE for Windows System consists of software, a computer that runs the software, and hardware that collects machinery data. The data collection hardware, the Data Acquisition Interface Unit (DAIU) is now more versatile and powerful.

### Works with wider variety of notebook and other computers

Now, ADRE for Windows does not require a special adapter to interface with your computer. It uses the computer's Enhanced Parallel Port (EPP). The new 208-P DAIU (P indicates the EPP interface) can be connected to a wider variety of notebook & desktop computers.

### More power, easier to use

ADRE for Windows Software has also been significantly improved. Version 3.1 works with the 208 DAIU and the 208-P DAIU, and it automatically detects which DAIU is connected. Version 3.1 also runs under Windows 95. The new ADRE for Windows System makes it easier to analyze machine performance, and gives you more powerful tools to use. Its most important improvements are:

- Easier capture of large amounts of data
- Flexible vector math calculations
- Quick and easy polar plot rescaling
- Better indication of "split resonances"
- More informative spectrum plots

### Easier capture of large amounts of data

Now, ADRE for Windows saves travel time for machinery specialists who collect an extensive amount of machine data. When ADRE for Windows fills its database with machinery data, it can automatically store the database, reinitialize itself, and begin collecting more data – without operator intervention.

ADRE for Windows is essential for detecting problems that occur infrequently. Simply connect the system to the machine's transducers or monitoring system, specify events that will activate data collection, and walk away. ADRE for Windows automatically collects data when it detects any of several user-specified events, such as a change in machine speed, amplitudes (1X, 2X, nX or direct vibration, probe gap, or process variable), phase lag, or a closing switch contact.

### Flexible vector math calculations

Shaft absolute vibration is an important quantity that, on certain machines, is necessary information when evaluating

dynamic responses caused by unbalance. It is useful for machines that transmit a significant amount of vibration to bearing pedestals or machine casings, typically machines that have soft supports or a high rotor-to-stator mass ratio.

Shaft absolute vibration is calculated by the vector addition of two different signals that ADRE for Windows has already collected. One is a proximity probe signal, which indicates the motion of the shaft relative to a bearing housing. The other is a velocity or Velomitor® signal, which shows the motion of the bearing housing relative to a fixed reference. ADRE for Windows can now perform the calculations, and present the results in an easy-to-understand format.

### Quick and easy plot rescaling

It is now easier to analyze ADRE for Windows' polar-format plots, because the plots can be quickly rescaled in pre-defined steps with one click of the mouse button.

Polar-format plots are used extensively in machinery diagnostics as they emphasize certain machine characteristics conveyed in the phase lag and amplitude of vibration components. A polar

trend plot of data from a machine running at constant speed can identify deterioration and stress, often earlier than a trend of vibration amplitude alone. Polar-format plots of data captured from startups and shutdowns reveal fundamental machine characteristics that are essential for balancing, baseline comparison, and troubleshooting.

ADRE for Windows makes it easier to compare polar-format plots with other plots, and to show detail in the plots. With a single click of the mouse button, you can now rescale polar plots by a factor you select.

### Better indication of "split resonances"

Lateral balance resonances are one of the fundamental machine characteristics effectively identified in transient data plots. However, the exact synchronous response, phase lag, and frequency characteristics of a resonance can be difficult to determine if the machine has a split resonance, and the transducers are not aligned with the stiff and weak axes of the machine. ADRE for Windows now makes it easier to determine information on machines with split resonances.



ADRE® for Windows has become more versatile and more powerful. It now runs on many more types of notebook computers. The new 208-P Data Acquisition Interface Unit is shown here with a laptop computer.



When the transducers do not coincide with the stiffness axes, the plots contain information affected by both axes and are difficult to interpret. This phenomenon is more common in horizontal machines, because most horizontal machines are usually stiffer vertically than horizontally. ADRE for Windows can now rotate the transducers in its software to make these fundamental characteristics easier to measure. After the ADRE for Windows program rotates the transducers in the software to coincide with the weak and stiff axes, the information is far easier to interpret.

ADRE for Windows now lets you more accurately identify the resonance frequency, synchronous response, phase lag, and Synchronous Amplification Factor for the weak and stiff axes. The

effect of a split resonance on a Bode and polar plot presentation can be observed. This technique was described in the June 1995 issue of the Orbit in an article entitled, "How to handle (and some cases of) forward and reverse orbits." A copy of this article is available upon request by checking the appropriate box on the Reader Service Card in this issue.

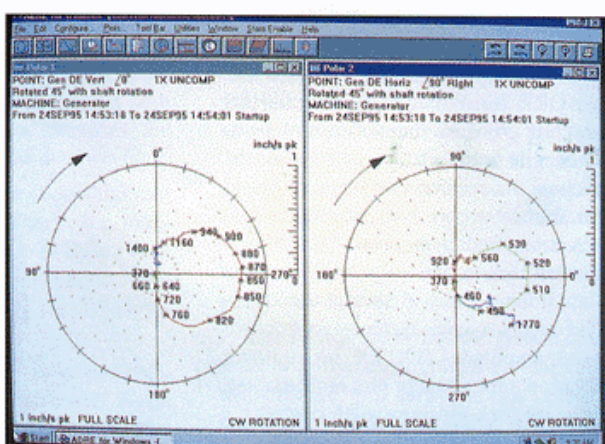
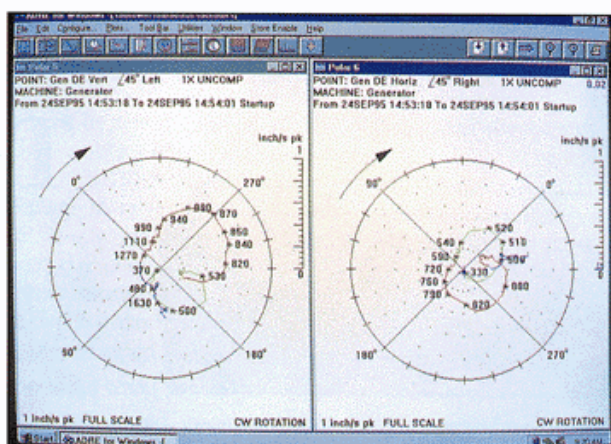
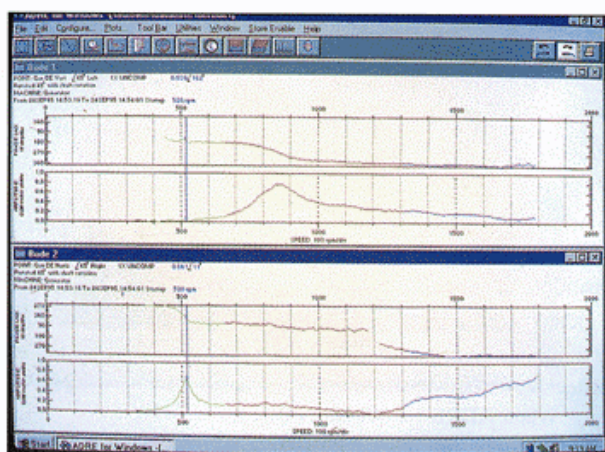
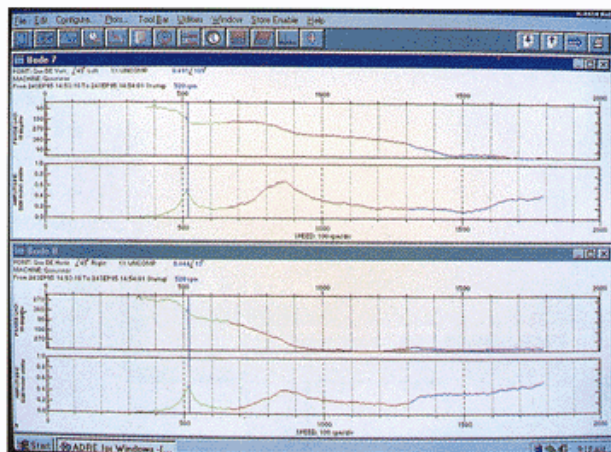
#### Improved documentation for spectrum plots

Spectrum plot documentation has been enhanced, because ADRE for Windows now lets you place up to 12 labels on each spectrum plot. The labels identify vibration components with frequency and amplitude information. Spectrum plot labels help you more easily identify the frequency and amplitude of a specific component.

#### World's most powerful portable diagnostic instrument

Bently Nevada's ADRE for Windows diagnostic software has become enormously popular because of its value. It is powerful; data from several points can be viewed simultaneously, each in its own window. It is flexible; data can be viewed in any of several plot formats, so the expert can choose the presentation that best exposes the parameter of interest. It is easy to use, portable, and battery-powered.

ADRE for Windows gives you essential information that makes problem diagnosis fast and accurate. Now, it is an even better value. Contact your nearest representative for more information and a complete demonstration. ■



Upper left is an ADRE® for Windows Bode plot *without* probe rotation. Upper right is the same Bode plot *with* probe rotation. Corresponding polar plot in lower left is *without* probe rotation. Lower right is the same polar plot *with* probe rotation.